

- \_\_\_ 21. In which of the following situations is a large amount of friction necessary?
- on top of an air hockey table
  - on the bottom of a downhill skier's skis
  - within the engine of a car
  - when a car is starting to move
- \_\_\_ 22. What type of friction does a plane experience when in flight?
- rolling friction
  - static friction
  - air resistance
  - none of the above
- \_\_\_ 23. Two students are sliding on sleds and have an initial velocity of 8.2 m/s. The mass of the boy and sled 2 is 54 kg, the mass of the girl and sled 1 is 52 kg, and the coefficient of kinetic friction between the sleds and the ice is 0.12. How far will the two slide before coming to a stop?



- 27 m
  - 23 m
  - 25 m
  - 29 m
- \_\_\_ 24. With an antilock braking system, what is one thing that you should never do?
- check your brake fluid
  - press the brake pedal too hard
  - steer the car in the correct direction
  - pump the brakes
- \_\_\_ 25. Which of the following is designed to increase friction?
- golf club grips
  - fluid bearings
  - near-frictionless carbon
  - ice skates
- \_\_\_ 26. What type of energy is possessed by materials that are stretched, compressed, or twisted and tend to return to their original shape?
- nuclear energy
  - thermal energy
  - elastic energy
  - chemical energy
- \_\_\_ 27. An electric light bulb performs which energy transformation?
- electrical energy  $\rightarrow$  chemical energy + kinetic energy
  - chemical energy  $\rightarrow$  kinetic energy
  - radiant energy  $\rightarrow$  chemical energy
  - electrical energy  $\rightarrow$  radiant energy + thermal energy
- \_\_\_ 28. Which term describes the capacity to do work?
- brownout
  - efficiency
  - energy
  - power

- \_\_\_ 30. Which term refers to the sum of kinetic energy and gravitational potential energy?
- efficiency
  - nuclear energy
  - thermal energy
  - mechanical energy
- \_\_\_ 31. How much mechanical work does a woman do on a wheelbarrow if she applies a force with a magnitude of 35 N in the forward direction and displaces the wheel barrow 4.0 m in the same direction?
- 140 J
  - 39 J
  - 4 J
  - 35 J
- \_\_\_ 32. Determine the coefficient of friction for a floor if 550 J of work are done moving a 12 kg box 10.0 m at a constant velocity.
- 0.47
  - 0.63
  - 0.52
  - 0.58
- \_\_\_ 33. How much work is done by a student carrying a 12 kg backpack while accelerating at a rate of  $0.51 \text{ m/s}^2$  over a distance of 5.0 m?
- 750 J
  - 0 J
  - 300 J
  - 590 J
- \_\_\_ 34. William is carrying a 9.20 kg box, which he sets down from a height of 1.50 m. How much work is done in the process?
- 13.8 J
  - 135 J
  - 135 J
  - 13.8 J
- \_\_\_ 35. A 430 kg motorcycle starts from rest and accelerates to a speed of 12 m/s. Calculate the net work done on the motorcycle.
- 42 kJ
  - 35 kJ
  - 31 kJ
  - 38 kJ
- \_\_\_ 36. Canada produces almost 60.0 % of its energy from hydroelectric dams. The network of dams have a capacity of  $3.4 \times 10^{10} \text{ W}$ . How much energy does Canada produce in 1.0 h from these dams?
- $1.8 \times 10^{14} \text{ J}$
  - $1.2 \times 10^{14} \text{ J}$
  - $1.6 \times 10^{14} \text{ J}$
  - $1.4 \times 10^{14} \text{ J}$

Solutions #21-36

21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.
D	C	D	D	A	C	D	C		D	A	A	B	B	C	B